

Fig. 1

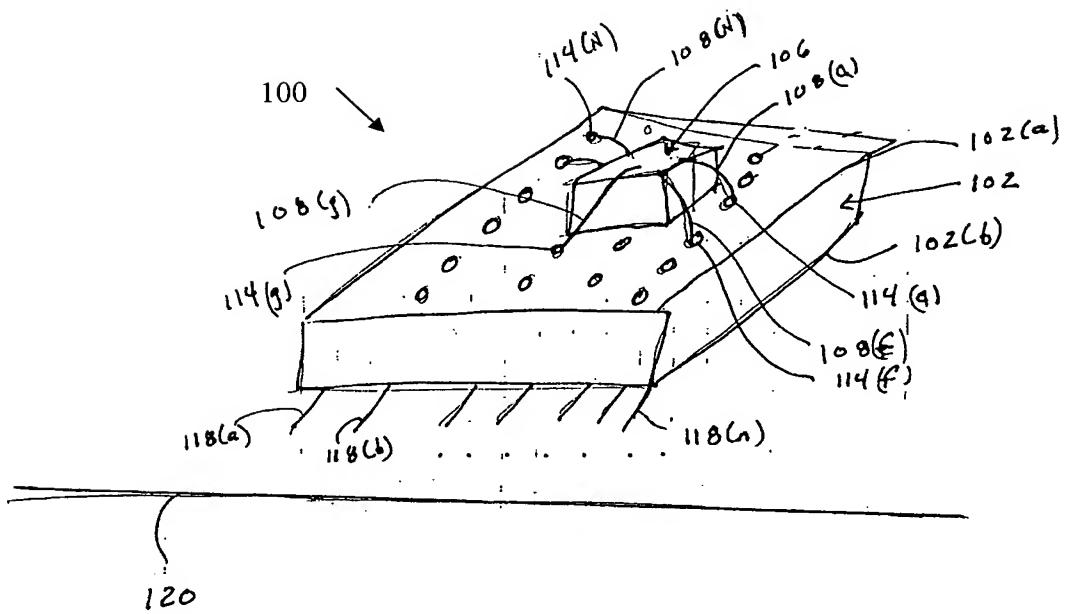


Fig. 2

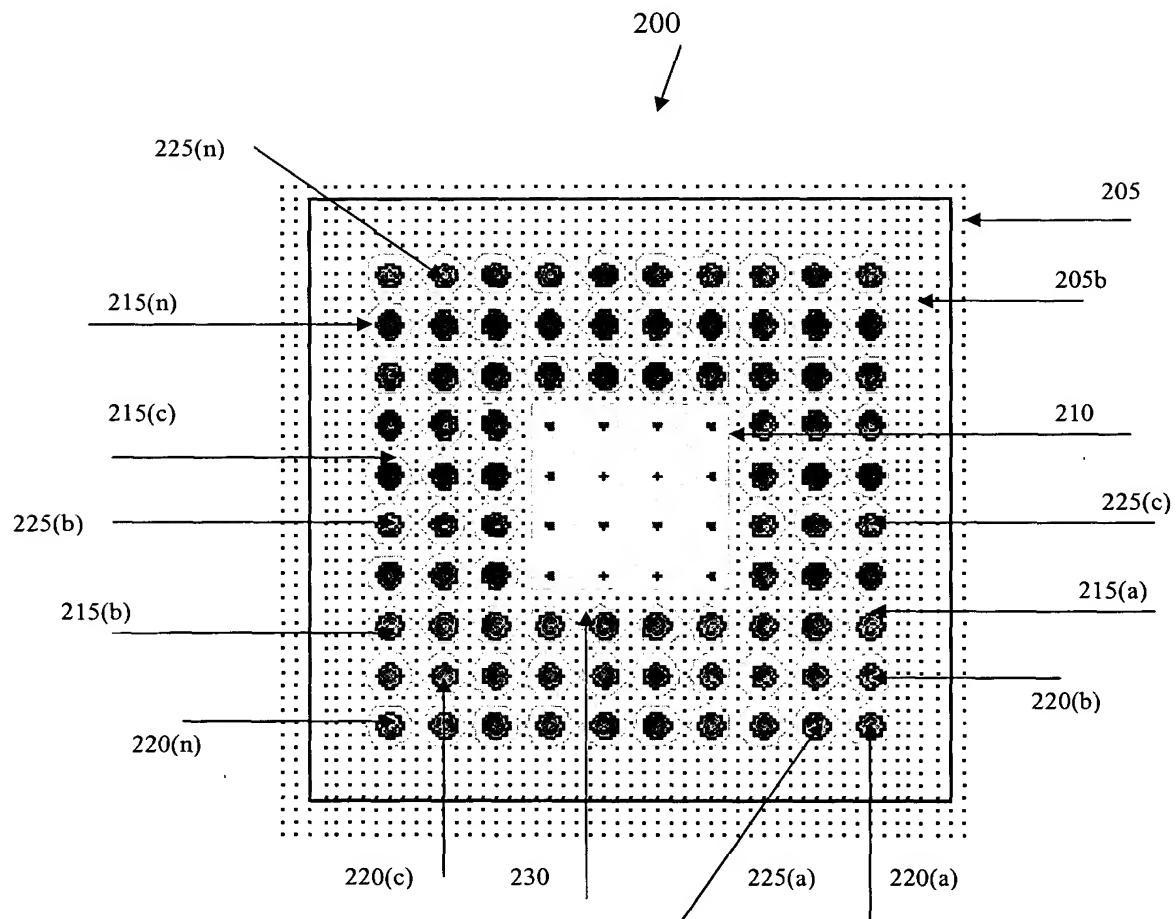


Fig. 3(a)

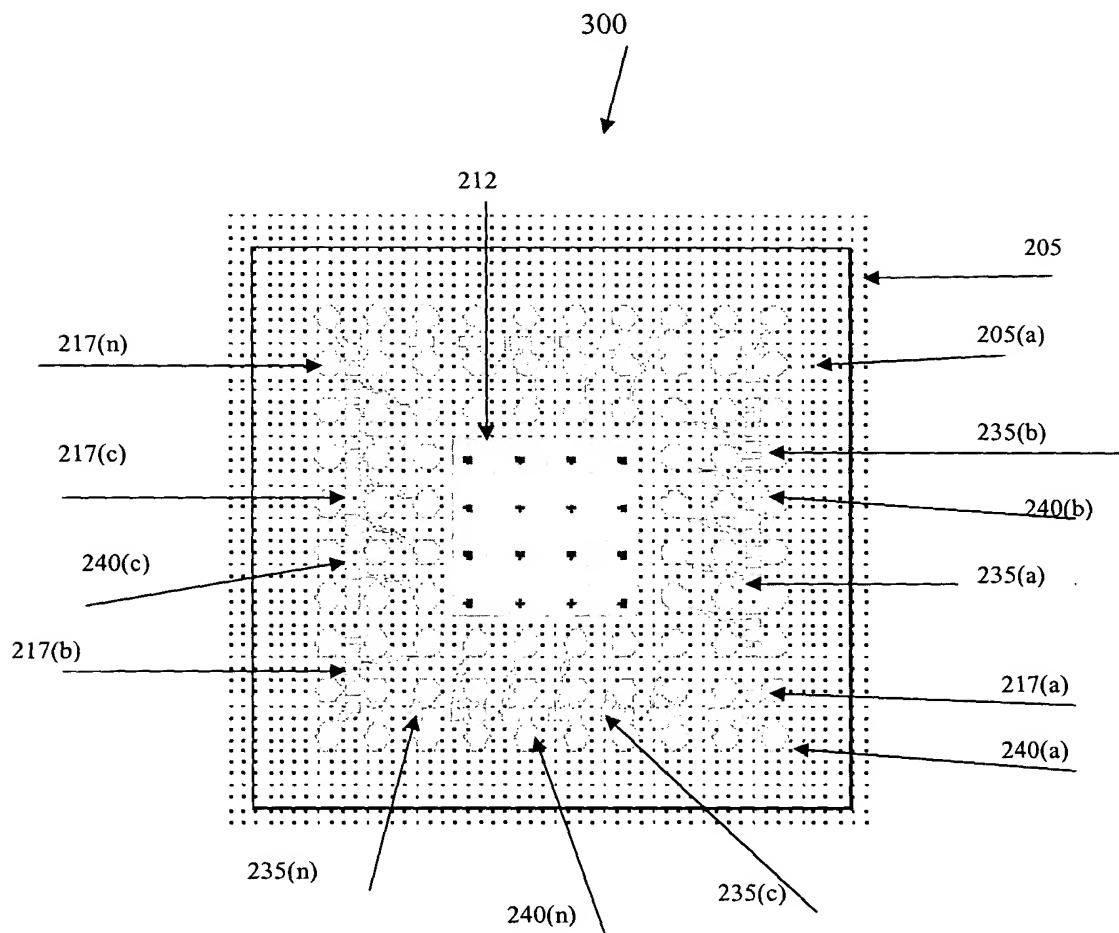


Fig. 3(b)

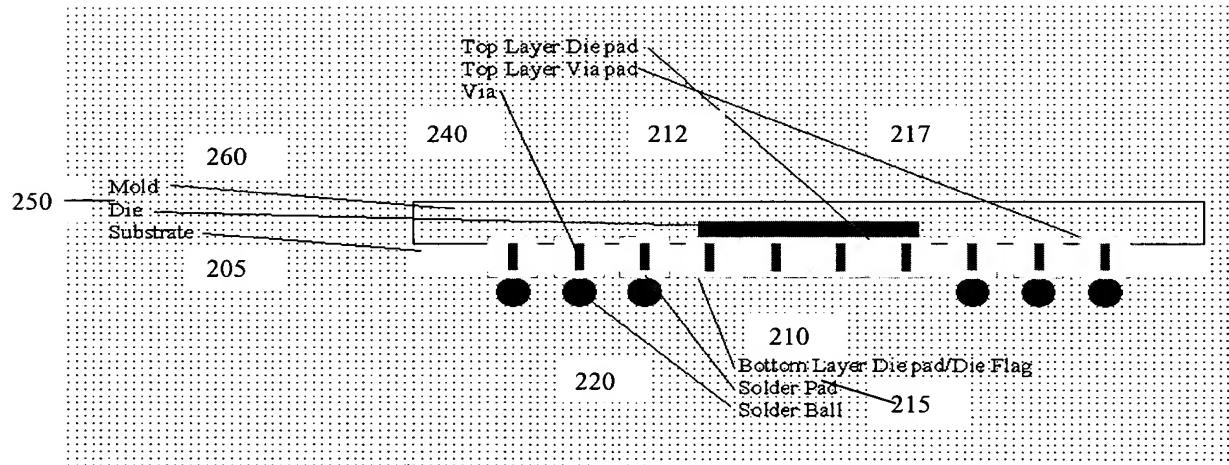


Fig. 4

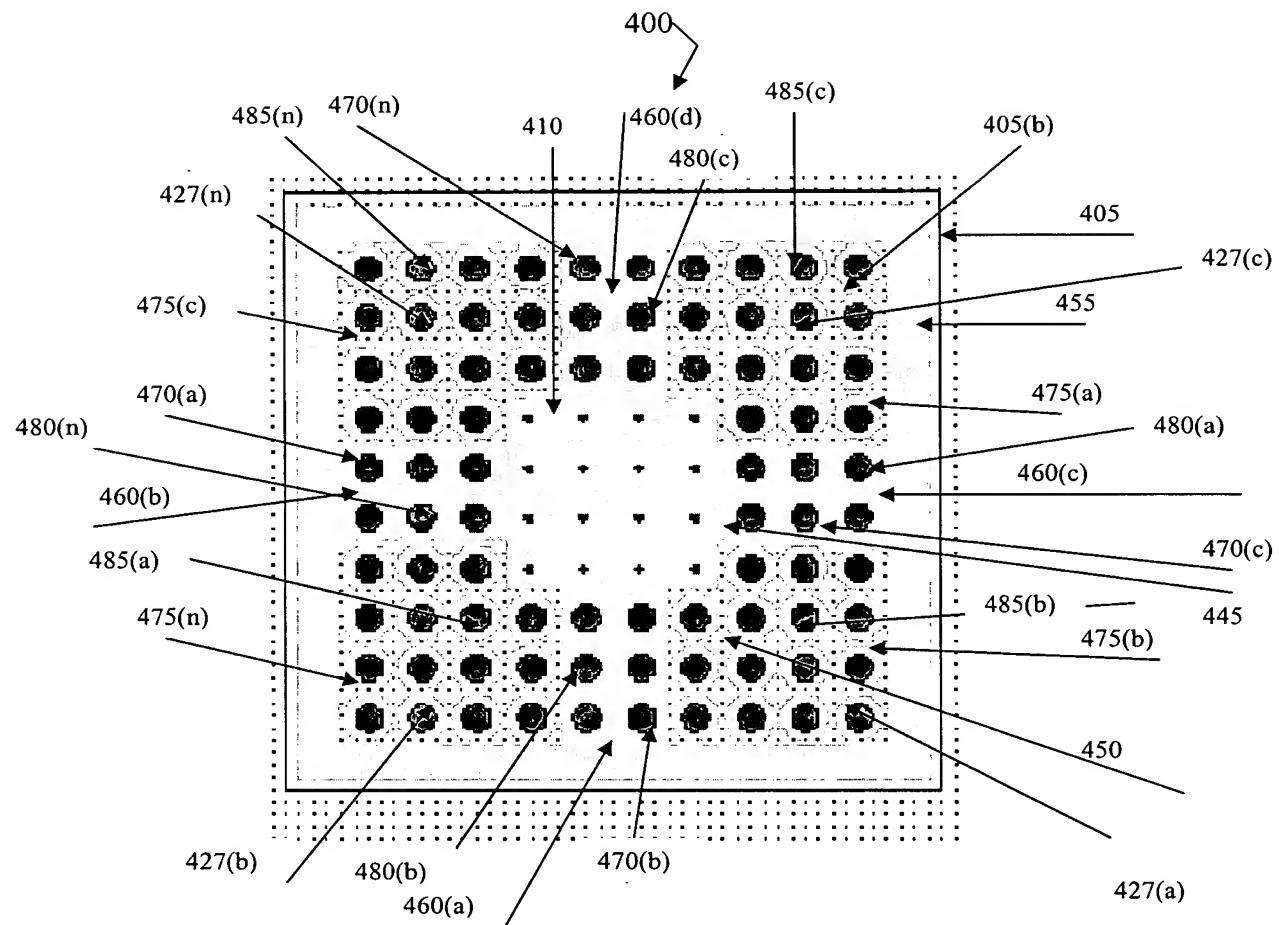


Fig. 5

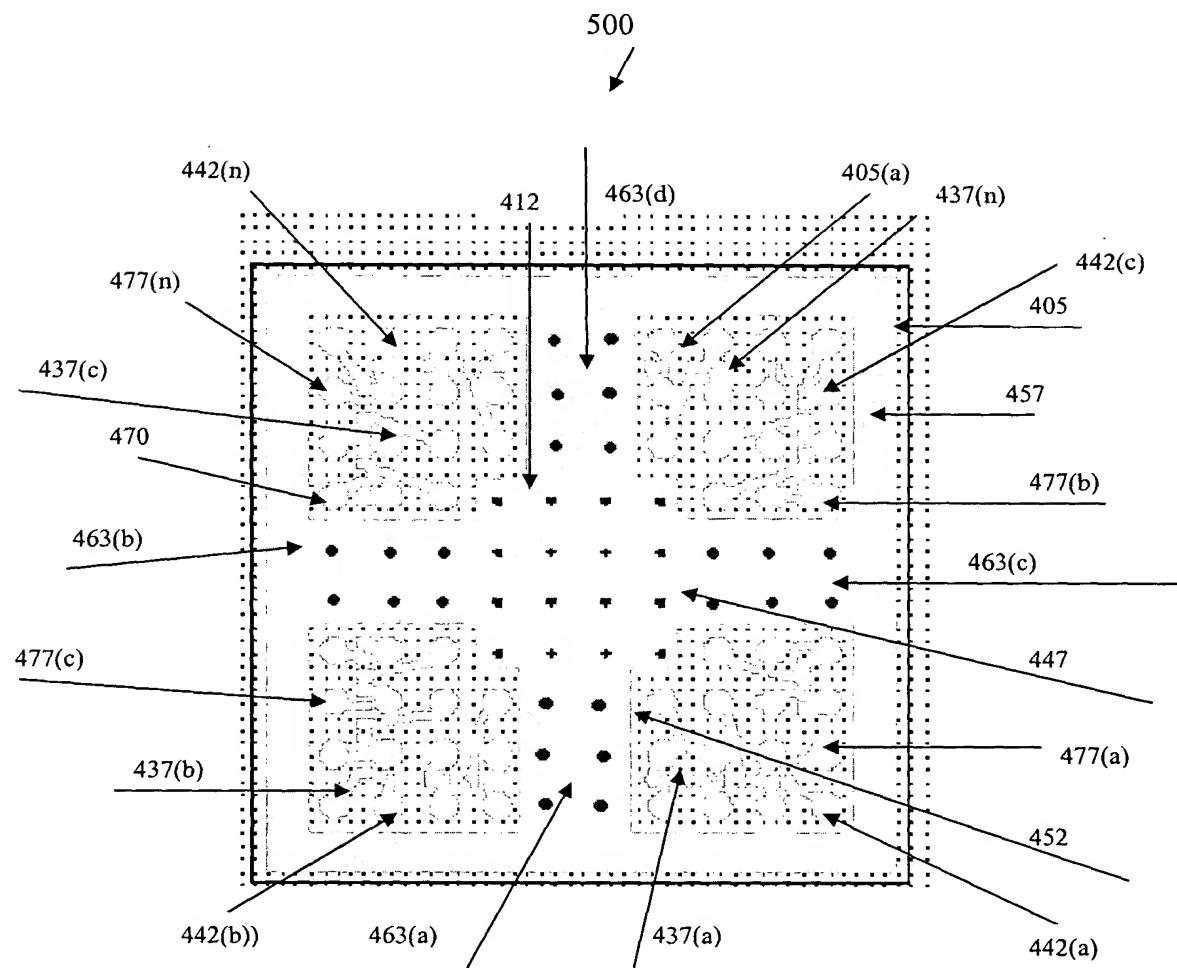


Fig. 6

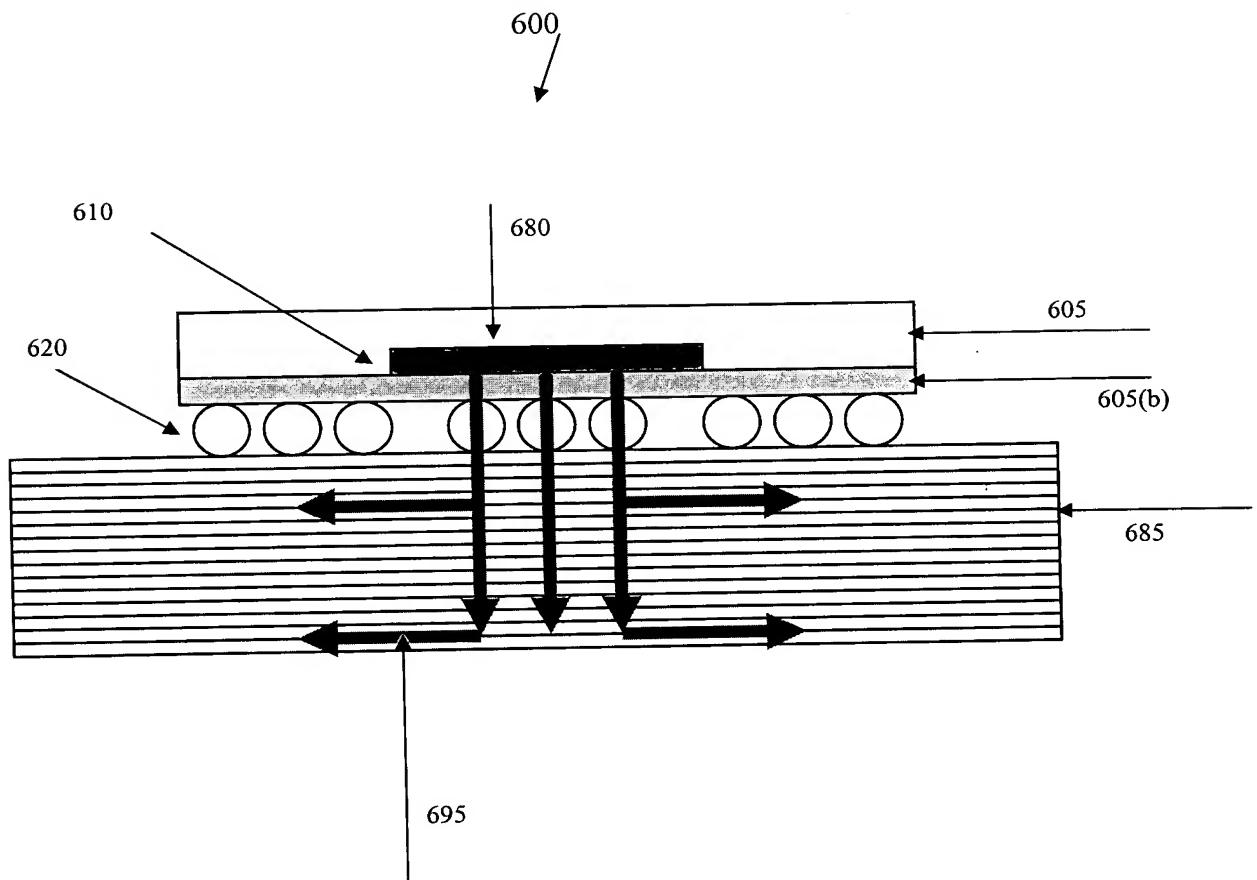


Fig. 7

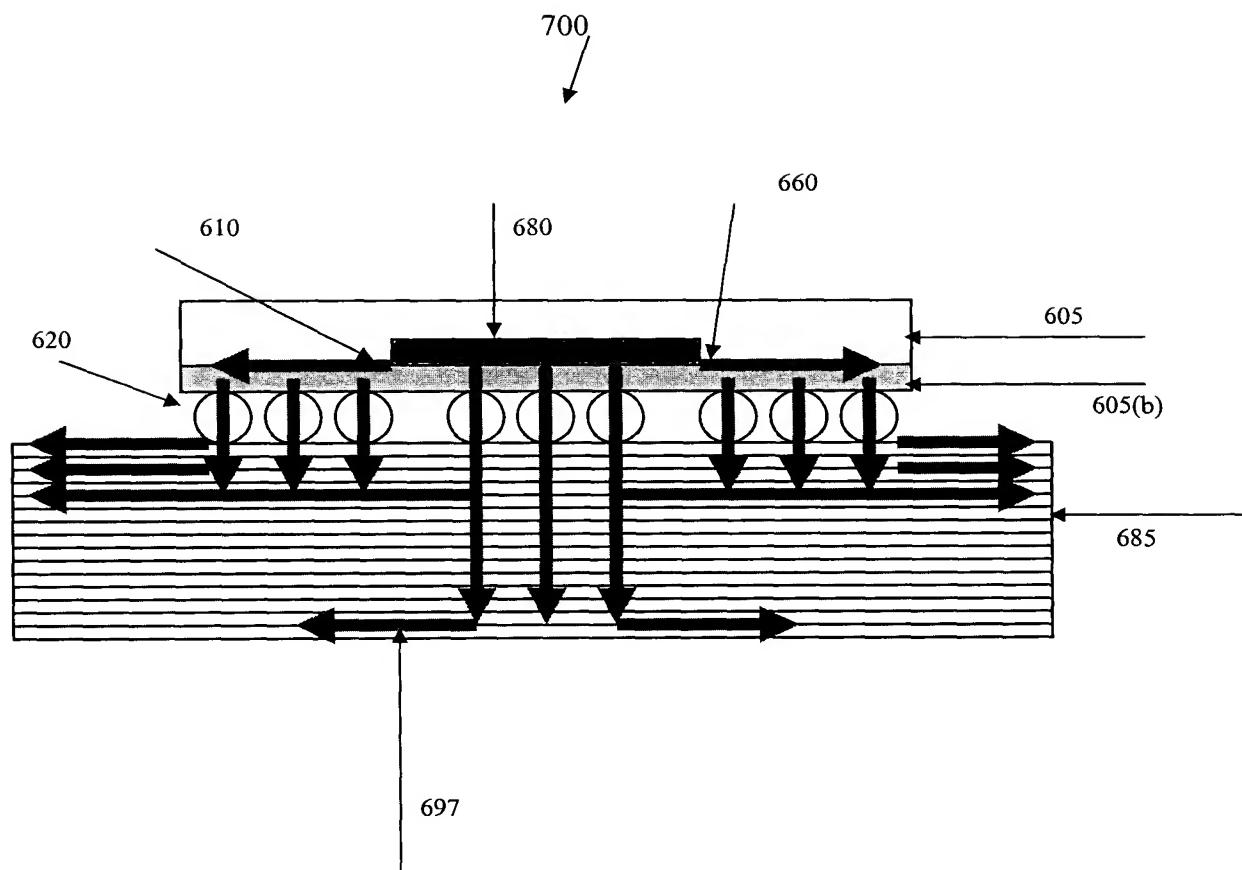


Fig. 8

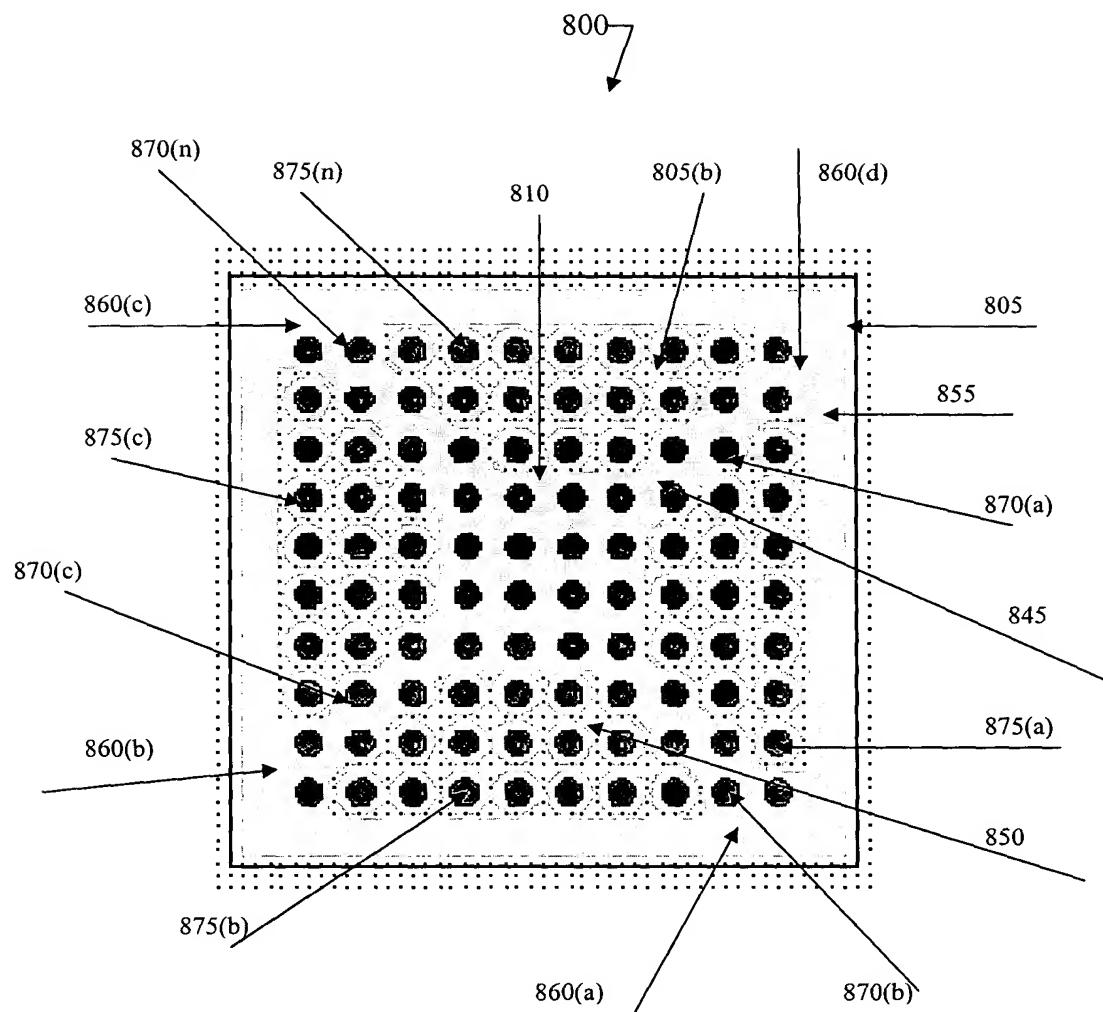


Fig. 9

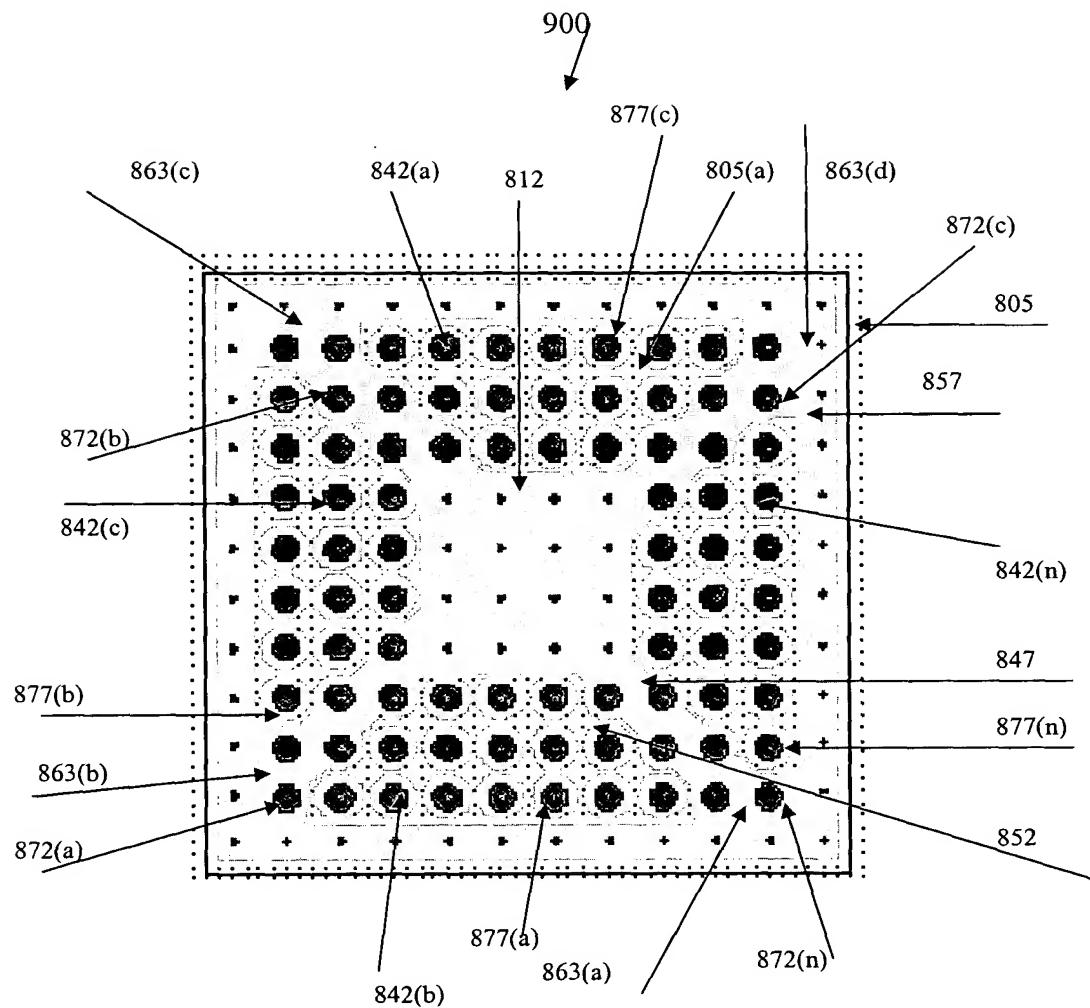
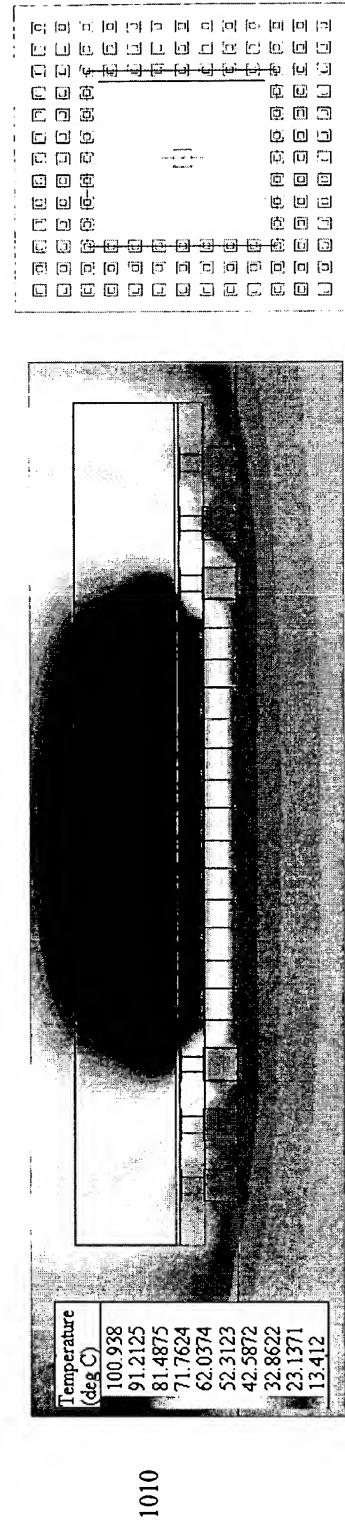


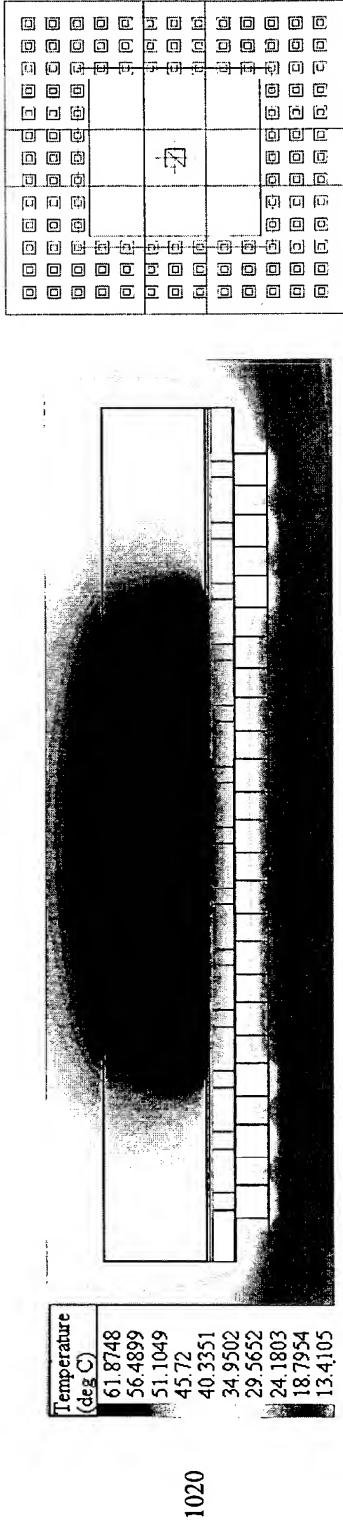
Fig. 10

Thermal Bar Substrate Simulation case

PWB cooling principle (no thermal ball option), normal:



PWB cooling principle (no thermal ball option), TB:



~ 40 % thermal performance decrease in package level